

## CLAIMS

WHAT IS CLAIMED IS:

1. A device that comprises:

a port configured to receive frames on a plurality of virtual channels; and  
control logic configured to determine the virtual channels associated with said frames  
based upon virtual channel characteristics from an external device.

2. The device of claim 1, wherein said external device comprises a networking device.

3. The device of claim 1, wherein said external device comprises a user terminal.

4. The device of claim 1, wherein said characteristic comprises a set of virtual channel  
identifiers.

5. The device of claim 1, wherein said characteristics comprise a virtual channel mapping mode.

6. The device of claim 1 further comprising an incoming remapping table that associates internal  
virtual channels with virtual channels of said external device.

7. A device that comprises:

a port configured to transmit frames on a plurality of virtual channels; and

control logic configured to determine the virtual channels associated with said frames based upon virtual channel characteristics from an external device.

8. The device of claim 7, wherein said external device comprises a networking device.

9. The device of claim 7, wherein said external device comprises a user terminal.

10. The device of claim 7, wherein said characteristics comprise a set of virtual channel identifiers.

11. The device of claim 7, wherein said characteristics comprise a virtual channel mapping mode.

12. The device of claim 7 further comprising an outgoing remapping table that associates internal virtual channels with virtual channels of said external device.

13. A device that comprises:

a port configured to receive and transmit frames on a plurality of virtual channels; and control logic configured to determine the virtual channels associated with said frames based upon virtual channel characteristics from an external device.

14. The device of claim 13, wherein said external device comprises a networking device.

15. The device of claim 13, wherein said external device comprises a user terminal.
16. The device of claim 13, wherein said characteristics comprise a set of virtual channel identifiers.
17. The device of claim 13, wherein said characteristic comprises a virtual channel mapping mode.
18. The device of claim 13 further comprising an incoming and outgoing remapping table that associates internal virtual channels with virtual channels of said external device.
19. A switch that comprises:
  - a plurality of ports configured to send and receive frames on a plurality of virtual channels; and
  - control logic configured to determine the virtual channels associated with said frames based upon virtual channel characteristics from an external device.
20. The switch of claim 19, wherein said external device comprises a networking device.
21. The switch of claim 19, wherein said external device comprises a user terminal.
22. The switch of claim 19, wherein said characteristics comprise virtual channel identifiers.

23. The switch of claim 19, wherein said characteristics comprise a virtual channel count.
24. The switch of claim 19, wherein said characteristics comprise a mapping mode.
25. A method for transmitting frames on virtual channels, the method comprising:
  - receiving virtual channel characteristics of an external device;
  - determining a correspondence between internal virtual channels and virtual channels of said external device; and
  - remapping outgoing frames according to said correspondence.
26. The method of claim 25, wherein said external device comprises a networking device.
27. The method of claim 25, wherein said external device comprises a user terminal.
28. The method of claim 25, wherein said characteristics comprise virtual channel identifiers.
29. The method of claim 25, wherein said characteristics comprise a virtual channel count.
30. The method of claim 25, wherein said characteristics comprise a mapping mode.
31. A method for receiving frames on virtual channels, the method comprising:
  - receiving virtual channel characteristics of an external device;

determining a correspondence between internal virtual channels and virtual channels of said external device; and  
remapping incoming frames according to said correspondence.

32. The method of claim 31, wherein said external device comprises a networking device.
33. The method of claim 31, wherein said external device comprises a user terminal.
34. The method of claim 31, wherein said characteristics comprise virtual channel identifiers.
35. The method of claim 31, wherein said characteristics comprise a virtual channel count.
36. The method of claim 31, wherein said characteristics comprise a mapping mode.
37. A method for receiving and transmitting frames on virtual channels, the method comprising:
  - receiving virtual channel characteristics of an external device;
  - determining a correspondence between internal virtual channels and virtual channels of said external device; and
  - remapping incoming and outgoing frames according to said correspondence.
38. The method of claim 37, wherein said external device comprises a networking device.
39. The method of claim 37, wherein said external device comprises a user terminal.

40. The method of claim 37, wherein said characteristics comprise virtual channel identifiers.

41. The method of claim 37, wherein said characteristics comprise a virtual channel count.

42. The method of claim 37, wherein said characteristics comprise a mapping mode.

43. A Fibre Channel (FC) fabric that comprises:

multiple FC switches couples together,

wherein at least one of the switches is configured with a plurality of ports that send and receive frames on a plurality of virtual channels and with control logic that determines the virtual channels associated with said frames based upon virtual channel characteristics from an external device.

44. The switch of claim 43, wherein said external device comprises a networking device.

45. The switch of claim 43, wherein said external device comprises a user terminal.

46. The switch of claim 43, wherein said characteristics comprise virtual channel identifiers.

47. The switch of claim 43, wherein said characteristics comprise a virtual channel count.

48. The switch of claim 43, wherein said characteristics comprise a mapping mode.

49. A network that comprises:

- at least two nodes;
- a Fibre Channel (FC) fabric coupling the nodes,
  - wherein the fabric comprises at least one switch that is configured with a plurality of ports that send and receive frames on a plurality of virtual channels and with control logic that determines the virtual channels associated with said frames based upon virtual channel characteristics from an external device.

50. The switch of claim 49, wherein said external device comprises a networking device.

51. The switch of claim 49, wherein said external device comprises a user terminal.

52. The switch of claim 49, wherein said characteristics comprise virtual channel identifiers.

53. The switch of claim 49, wherein said characteristics comprise a virtual channel count.

54. The switch of claim 49, wherein said characteristics comprise a mapping mode.